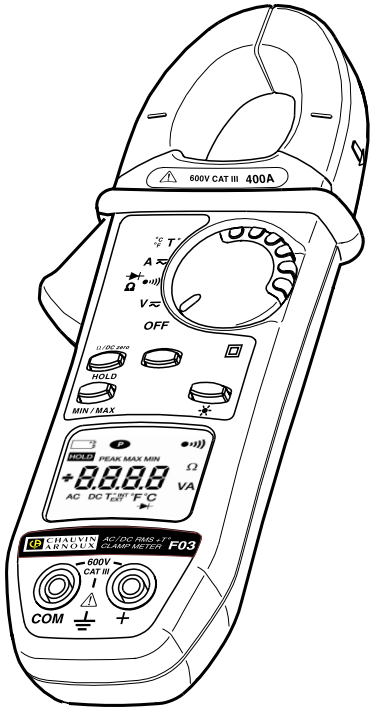
- **Pince multimètre**
- **Clamp multimeter**
- **Vielfachmesszange**
- **Pinza multimetro**
- **Pinza multimetrica**

F 03



FRANÇAIS
ENGLISH
DEUTSCH
ITALIANO
ESPANOL

Notice de fonctionnement
User's manual
Bedienungsanleitung
Libretto d'Istruzioni
Manual de Instrucciones

CHAUVIN ARNOUX

English

Meaning of symbol ⚠
Caution! Please consult the User Manual before using the device.
In this User Manual, failure to follow or carry out instructions preceded by this symbol may result in personal injury or damage to the device and the installations.

Meaning of symbol ⧈
This appliance is protected by double insulation or reinforced insulation. It does not have to be connected to an earth protection terminal for electrical safety.

Meaning of CAT III symbol
This voltage surge category III clamp, with pollution level 2, complies with stringent reliability and availability requirements, corresponding to fixed industrial and domestic installations (see IEC 664-1, ed 92).

Thank you for purchasing this **"F03" series multimeter clamp**.

To get the best service from this instrument:
- **read** this user's manual carefully,
- **respect** the safety precautions detailed

⚠ PRECAUTIONS FOR USE ⚠

- Never use on circuits of over 600 V in relation to the earth which have a surge category above III, i.e. fixed industrial and domestic installations (cf. IEC 664-1).
- Use indoors in environments with a pollution degree of 2 or less (cf. IEC 664-1), a temperature between 0°C to +50°C and relative humidity of 70% or less.
- Use accessories that comply with safety standards (NF EN 61010-2-031), with a minimum voltage of 600 V and a surge category of III.
- Never open the clamp case without first disconnecting the unit from the electricity supply.
- Never connect to the circuit to be measured if the clamp case is not properly closed.
- Before taking a measurement, ensure that the leads and selector switch are in the correct position.
- When measuring current, ensure that the conductor is correctly aligned with the marks and the jaws are properly closed.
- Always disconnect the clamp from the electricity supply before changing the battery.
- Do not perform resistance measurements, continuity tests or tests on semi-conductors on live circuits.

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1. PRESENTATION

Reliability and simplicity are the key features of the F03 multimeter clamp for use by electricity professionals:

- A compact instrument integrating a current sensor for measuring intensity without switching off the power to the circuit to be checked.
- Exceptional ergonomic design which includes:
  - automatic or manual selection of the type of signal to be measured, direct or alternating,
  - automatic selection of the measurement calibration,
  - programmable buzzer warning when voltage is present: V-Live,
  - buzzer warning when the measurement range is exceeded,
  - backlit digital display
  - system to shut the instrument down automatically.
  - MIN - MAX - PEAK value recording function,
  - correction of measurement drift for direct current (zero DC)
  - automatic offset of measurement lead resistance (zero Ω).
- Compliance with IEC electrical safety standards and EC marking
- Light and robust for on and off-site use.

2. DESCRIPTION

(see diagram in § 8 Appendix)

① **Jaws**

② **5-way selector switch:**

OFF The clamp is switched off, it is switched on when one of the other functions is selected

V≈ Measurement of direct and alternating voltage (RMS value)

Measurement of continuity, and, with the yellow key, resistance and semi-conductor tests

A≈ Measurement of direct and alternating current (RMS value)

T° Measurement of the clamp's internal or external temperature, according to the presence or absence of a sensor, in °C or °F.

③ **Control keys**

3 types of action are possible with these keys:

Short press

< 1.3 s, it is valid as soon as key activation is detected.

Long press

> 1.3 s, this enables the user to enter a measurement or operating mode. Holding the key down or releasing it does not have any effect.

Key held down
It enables the user to enter a measurement or operating mode and to stay in this mode while the key is held down. When the key is released, the user reverts to the previous mode used.

■ **HOLD** has 4 different functions *(see description § 3.8)*
- Blocking the display
- Preselection of MIN/MAX mode
- Automatic offset of lead resistance
- Automatic zero offset when measuring current

■ **The yellow key** has 3 different functions *(see description § 3.8)*
- Manual selection of AC/DC mode
- Selection of the resistance function (Ω), semi-conductors test (→|—), continuity ((•))
- Choice of units (°C or °F) when measuring temperature

■ **MIN/MAX** functions by circular permutation using short presses on the key:

MIN/MAX	V and A functions	Other functions
1st press	PEAK value	MAX value
2nd press	MAX value	MIN value
3rd press	MIN value	Return to MAX value
4th press	Return to PEAK value	_

A long press on the key at any time allows the user to quite MIN/MAX mode.

Note: *In MIN/MAX mode, the instrument's automatic shutdown function is deactivated (Ⓟ symbol lit)*

■ ✳ **Short press:** controls the backlighting of the display. Automatic deactivation after 2 minutes.
Key held down: displays the estimated remaining battery autonomy, expressed in hours.

HOLD key / selector switch combination
(see description § 3.8)
- Deactivates the instrument's automatic shutdown function.
- Activation of the V-Live function
- Display of the internal software version.

Yellow key / selector switch combination
(see description § 3.8)
- Modification of the buzzer indication threshold for continuity tests.
- Choice of default unit (°C or °F) when measuring temperature
- Setting to the instruments default configuration.

MIN/MAX / selector switch combination
(see description § 3.8)
- Date of the instrument's last calibration.

④ **Liquid crystal display**

The liquid crystal display provides a digital display of the values measured and the associated units and symbols.

Digital display

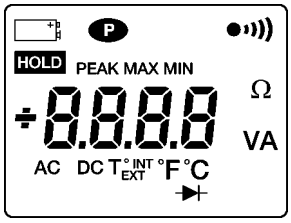
4 digits, 9999 points, 3 decimal points, + and - signs (DC and peak measurement).

+ OL : Outside the range by a positive value (> 3999 points)

- OL : Outside the range by a negative value

OL : Outside the range by a value without a sign

- - - - : Undetermined value (middle segments)



Display of symbols

Flashing, clamp autonomy limited to about 1 hour
Continuous, battery run down, the operation or accuracy of the clamp cannot be guaranteed

Constant operation (automatic shutdown disabled)

Continuous: continuity measurement
Flashing: V-Live function selected

HOLD HOLD function active

PEAK Lit in V and A in MIN/MAX Mode if peak value measurement is selected

MAX Indicates the display of a maximum value in MIN/MAX mode

MIN Indicates the display of a minimum value in MIN/MAX mode

AC **Continuous:** measurement in manual AC mode
Flashing: measurement in automatic AC mode

DC **Continuous:** measurement in manual DC mode
Flashing: measurement in automatic DC mode

T° Temperature measurement

INT Measurement of temperature when the terminals are not connected or the thermocouple connected is faulty.

EXT Measurement of temperature when the thermocouple is connected

⊣▶⊢ Test of semi-conductors on **Ω** position

■ **The Buzzer**

The buzzer makes different sounds according to the function assigned.

- **Short and medium buzz**: valid key
- **Short and high-pitched buzz**: invalid key
- **Short and low-pitched buzz**: exit from MIN/MAX mode
- **2 short, high-pitched buzzes**: validation of a configuration parameter
- **Short and medium buzz every 400 m secs**: voltage measured is above the instrument's guaranteed voltage safety level.
- **5 repeated short and medium buzzes**: automatic deactivation of the instrument
- **Continuous medium buzz**:
  continuity value measured, below programmed threshold, short-circuit connection in semi-conductor test.
- **Modulated medium continuous buzz**: value measured in volts, over 45Vpeak when the V-Live function is selected.

3. IMPLEMENTATION
FUNCTIONAL CHARACTERISTICS

3.1 Reference conditions

The functional characteristics mentioned in each of the measurement functions are guaranteed within the following reference conditions:

- Temperature: +23°C ±3 K.
- Humidity ratio: 45% to 75% relative humidity.
- Supply voltage: 8.5 V ±0.5 V.
- Frequency range of the alternating signal applied: 45 -65 Hz
- Peak factor of the alternating signal applied: $\sqrt{2}$
- Position of the conductor in the clamp jaws: centred
- Diameter of the conductor: ≤ 5 mm
- No external AC magnetic field
- No electrical field

3.2 Voltage measurements ≂ (V)

1. Connect the measurement leads to the instrument's terminals, complying with the polarities indicated: red lead on the "**+**" terminal and black lead on the "**COM**" terminal.

2. Set the selector switch to the "**V**≂" position.

3. Connect the unit to the voltage source to be measured, making sure if possible that this voltage does not exceed the maximum acceptable limits (see table below).
Range switching and AC/DC selection are automatic. Press the yellow key to force manual selection of AC/DC if necessary.

⚠ **If the signal measured is > 45 V peak**, the buzzer is activated if the V-Live function is selected *(see § 3.8.10)*

Display range	40 V	400 V	4 000 V *(1)*
Measuring range *(2)*	0.2 V to 39.99 V	40.0 V to 399.9 V	400 to 600 V 400 to 900 V_{peak}
Accuracy	1% L +5 cts	1% L +2 cts	1% L +2 cts
Resolution	10 mV	0.1 V	1 V
Input impedance	1 MΩ		
Protection	600 V AC or DC		

(1) In DC, ***+ OL*** *is displayed over 600 V and* ***- OL*** *over - 600 V (900 V in PEAK mode).*
In AC, ***OL*** *is displayed over 600 V rms (900 V in PEAK mode)*

(2) In AC, if the value of the voltage measured is < 0.15 V, ***0.00*** *is indicated on the display.*

⚠ **For ≥ 600 V_{DC} or RMS voltage, a repeated buzzing sound indicates that the voltage measured is higher than the instrument's guaranteed voltage safety level.**

■ **MIN/ MAX Mode:**
- Accuracy: ditto preceding table + 0.2% L
- Capture time: 100 ms typ.

■ **PEAK Mode:**
- Accuracy: ditto preceding table +2% L
- Capture time: 500 µs typ. (2.5 ms max.)

■ **Special characteristics in V-Live mode**
- Detection threshold accuracy: 45 V_{peak} ± 2V.

3.3 Audio continuity test ( )

1. Connect the measuring leads to the instrument's terminals.

2. Set the selector switch to the " " position.

3. Connect the instrument to the circuit to be tested. The buzzer is permanently active as soon as contact is established (circuit closed) and if the value of the resistance measured is less than the value of the threshold chosen by programming (can be set from 1 to 40 Ω, see § 3.8.11) Above 400 Ω, the display indicates "***OL***".

■ **Offset of measurement lead resistance (zero Ω)**
To measure low-value resistance, first measure the resistance of the leads.
- Short-circuit the leads.
- **Press on the HOLD key and hold down** until zero is displayed. The value of the resistance of the leads will then be saved and deducted from the value of the resistance subsequently measured.

Note: *If the value measured is over 2 Ω, this correction is inhibited and the value of the correction saved is reset to zero.*

■ **Characteristics**

Display range	400 Ω
Measuring range	0.0 to 399.9 Ω
Accuracy *(1)*	1% L +2 counts
Resolution	0.1 Ω
Open circuit voltage	≤ 3.2 V
Measuring current	320 µA
Protection	500 V AC or 750 V (DC or peak)

(1) with offset of the resistance of the measurement leads

■ **MIN/ MAX Mode:**
- Accuracy: ditto preceding table + 0.2% L
- Capture time: 100 ms typ.

3.4 Resistance measurement (Ω)

1. Connect the measuring leads to the instrument's terminals.

2. Turn the selector switch to the position and press once on the yellow key:
The symbol is no longer displayed.

3. Connect the instrument to the circuit to be measured.
Range selection is automatic.
To accurately measure low-value resistance, offset the resistance of the measurement leads (*see § 3.3)*
Above 4000 Ω, the display indicates ***OL***.

Display range	400 Ω	4000 Ω
Measuring range	0.0 to 399.9 Ω	400 to 3999 Ω
Accuracy *(1)*	1% L +2 counts	
Resolution	0.1 Ω	1 Ω
Open circuit voltage	≤ 3.2 V	
Measuring current	320 µA	40 µA
Protection	500 V AC or 750 V (DC or peak)	

(1) With offset of the resistance of the measurement leads

■ **MIN/ MAX Mode:**
- Accuracy: ditto preceding table +0.2% L
- Capture time: 100 ms typ.

3.5 Semi-conductor test (→|)

1. Connect the measurement leads to the instrument's terminals, complying with the polarities indicated: red lead on the "**+**" terminal and black lead on the "COM" terminal.

2. Turn the selector switch to the position and press twice on the yellow key: The →| symbol is displayed.

3. Connect the instrument to the semi-conductor (junction) to be tested.
The current to be measured flows in the direction of the "+" terminal to the "COM" terminal. It corresponds to the test of the semi-conduction junction in the direct direction.
- **Short circuit on junction:** buzzer warning for a threshold < 0.050 V
- **Junction reversed or cut** (or threshold > 3.2V) ***OL*** displayed.

Display range	4 V
Measuring range	0.000 to 3.199 V
Accuracy	1% L +2 counts
Resolution	1 mV
Measurement current *(1)*	2 mA to 4 mA
Protection	500 V AC or 750 V (DC or peak)

(1) according to the voltage measured

■ **Mode MIN/ MAX :**
- Précision : idem tableau précédent +0,2% L
- Temps de capture : 100 ms typ.

3.6 Current measurements ≂ (A)

1. Set the selector switch to the **"A ≂"** position

2. Clamp the conductor through which the current to be measured is passing, ensure that the jaws are properly closed and no foreign body is caught in the space between the jaws.
In DC measurement, the arrow "⇨" engraved on the jaws must be pointing in the presumed direction of the current flow for the sign of the value displayed to be significant.
Range switching and AC/DC selection are automatic. Press the yellow key to force manual selection of AC/DC if necessary.

■ **Correction of zero in current measurement (zero DC)**
To measure current with a low value, first correct the zero.
- Press the HOLD key and hold down until zero is displayed. The corrected value will then be saved and deducted from the value of the current subsequently measured.
Note: *this correction is only made to the continuous zero component. If the value measured is over 6 A, this correction is inhibited and the value of the correction saved is reset to zero.*

■ **Characteristics**

Display range	40 A	400 A	4 000 A *(1)*
Measuring range *(2)*	0.20 to 39.99 A	40.0 to 399.9 A	400 to 600 Apeak
Accuracy *(3)*	1.5% L + 10 counts	1.5% L +2 counts	
Resolution	10 mA	100 mA	1 A

(1) In DC, ***+ OL*** *is displayed over +400 A and* ***- OL*** *over - 400 A (600 A in PEAK mode).*
In AC, ***OL*** *is displayed over 400 A rms (600 A in PEAK mode)*
(2) In AC, if the value of the current measured is < 0.15 A, the display indicates ***0.00***
(3) With correction of the zero in DC

- Repeatability of the measurement after closing the clamp several times in succession: 0.3% typical

■ **MIN/ MAX Mode:**
- Accuracy: ditto preceding table + 0.2% L
- Capture time: 100 ms typ.

■ **PEAK Mode:**
- Accuracy: ditto preceding table +2% L +0.5 A
- Capture time: 500 µs typ. (2.5 ms max.)

3.7 Temperature measurement (T°)

3.7.1 Without a sensor

Set the selector switch to the "**T°**" position.
The temperature displayed is the instrument's internal temperature (the INT symbol is lit), which is the same as the ambient temperature after a sufficient thermal stabilisation time. It can be expressed as °C or °F: the unit is chosen with the yellow key.

3.7.2 With a sensor

1. Connect the sensor (couple K) to the clamp terminals, complying with the polarity indicated, and put in the place where the temperature is to be measured.
2. Set the selector switch to the **"T"** position. The temperature displayed is that of the sensor (EXT symbol is lit), it can be expressed in °**C** or °**F**: the unit is chosen with the yellow key.

■ **Characteristics**

Function	Internal temperature	External temperature	
Type of sensor	Integrated circuit	K couple	
Display range	400°C 400°F	400°C 400°F	4,000°C 4000°F
Measuring range	-10.0°C to +50.0°C	-50.0°C to +399.9°C	+400°C to +1,000°C
	+15.0°F to +120.0°F	-50.0°F to +399.9°F	+400°F to +1832°C
Accuracy	± 1.5°C ±2.7°F	1% L ±1.5°C 1% L ±2.7°F	1% L ±1.5°C 1% L ±2.7°F
Resolution	0.1°C 0.2°F		1°C 1°F
Detection of sensor cutoff	-	INT symbol lit instead of EXT	
Thermal time constant	0.7 min./°C	According to the sensor model	

Note: *The accuracy stated for external temperature measurement does not take the accuracy of the K couple into account.*

■ **MIN/ MAX Mode:**
- Accuracy: ditto preceding table + 0.2% L
- Capture time: 100 ms typ. (every 800 ms)

3.8 Secondary functions

3.8.1 Blocking the display

A short press on the **HOLD** key freezes the display.
The display is cleared when the key is pressed for the second time.

3.8.2 Preselection of MIN/MAX mode

MIN/MAX mode is preselected by a short press on the **HOLD** key and then on the **MIN/MAX** key. MIN/MAX mode is then activated by pressing on the HOLD key.

This function allows MIN/MAX mode to be selected when required, to avoid for example, the inclusion of untimely or erroneous MIN/MAX values

3.8.3 Automatic offset of lead resistance

To offset lead resistance, hold the **HOLD** key down when the continuity test or resistance measurement function is selected.

When the key is released, once zero is displayed, the correction value is saved in the clamp.

⚠ **If the value measured is over 2 Ω**, this correction is inhibited and the value of the correction saved is reset to zero.

This correction is inhibited in MIN/MAX mode.

3.8.4 Automatic zero offset when measuring current

To offset the zero, hold the **HOLD** key down when current measurement function is selected.

When the key is released, once zero is displayed, the correction value is saved in the clamp.

⚠ **If the value measured is over 6 A**, this correction is inhibited and the value of the correction saved is reset to zero.

This correction is inhibited in MIN/MAX mode.

3.8.5 Manual selection of AC or DC mode

The clamp defaults automatically to AC or DC mode (AC or DC symbol flashes) for V and A functions.

A series of short presses on the **yellow key** allows alternating (AC) and continuous (DC) measurement to be selected manually and to return to automatic mode.

When the mode is selected manually, the AC or DC symbol is continuous.

It is impossible to select manual mode in MIN/MAX or HOLD modes.

3.8.6 Selections possible in the continuity function

By default, the clamp is set to the continuity function (•)) for the corresponding position of the switch.

With a series of presses on the **yellow key**, the user can select resistance measurement (Ω) then the semi-conductor test function (→|–) and then return to the continuity function (•)).

3.8.7 Choice of units (°C or °F) when measuring temperature

The unit can be chosen from the temperature function by a short press on the yellow key, which allows °C or °F to be selected as required. The unit is not saved when the clamp is turned off. See § 3.8.8 to save the unit to memory.

3.8.8 Saving the unit (°C or °F) when measuring temperature

Hold the **yellow key** down and turn the selector switch from the OFF to the **T**° position.

The instrument buzzes twice, then the T° symbol lights up and the °F symbol flashes if the instrument was previously in °C or the °C symbol flashes if it was in °F.

The configuration chosen is saved when the key is released: the °F or °C symbol remains lit continuously.

3.8.9 Deactivation of automatic shutdown

Hold the **HOLD** key down and turn the selector switch from the OFF position to the position.

The instrument buzzes twice then the P symbol flashes.

The configuration chosen is saved when the key is released: the P symbol remains lit continuously.

The instrument returns to automatic shutdown mode when the switch is placed in the OFF position.

3.8.10 Activation of the V-Live function

Hold the **HOLD** key down and turn the selector switch from the OFF position to the **V** position.

The instrument buzzes twice then the V and symbols start to flash.

The configuration chosen is saved when the key is released: the V symbol then remains continuously lit and the symbol flashes.

Follow the same procedure to deactivate the V-Live function: the symbol is no longer lit when the key is released.

3.8.11 Modification of the buzzer threshold indication for continuity tests.

Hold the **yellow** key down and turn the selector switch from the OFF to the position.

The instrument buzzes once, the Ω and symbols and the threshold value light up (default value 40.0).

It can then be set between 1 Ω and 40 Ω by a series of presses on the yellow key (short press: in increments of 1 Ω; key held down: in increments of 10 Ω).

Once the value is chosen, activate the selector switch to save.

3.8.12 Setting the instrument's default parameters.

Hold the **yellow** key down and turn the selector switch from the OFF to the **A** position.

The instrument buzzes twice then all the segments of the digital display and the symbol flash.

The default settings are saved when the key is released: the display stops flashing and the symbol disappears.

The default settings are:
- Buzzer threshold: 40 Ω
- Auto shutdown: with
- V-Live function: none
- Temperature measurement unit: not managed

3.8.13 Date of the instrument's last calibration.
Hold the **MIN/MAX** key down and turn the selector switch from the OFF position to the **V** position.
The instrument buzzes, then the instrument's calibration date is displayed in the form "week - year" (WW.YY) as long as the MIN/MAX key is held down.

3.8.14 Display of the internal software version.
Hold the **HOLD** key down and turn the selector switch from the OFF position to position **A**.
The instrument buzzes and the software version is displayed in the format UX.XX for two seconds, then replaced by a display of all the display's segments while the HOLD key is held down.

3.8.15 Display of the display's segments
See § 3.8.1.4. It is also possible for all key-switch combinations not previously described.

4. GENERAL SPECIFICATIONS

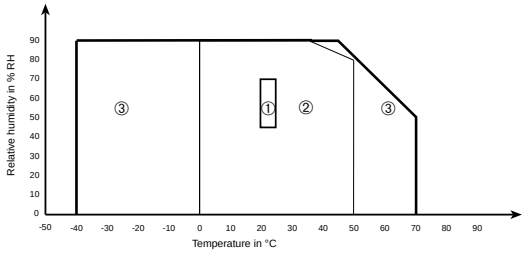
4.1 Dimensions and weight
■ 70 x 193 x 37 mm ■ 260 g

4.2 Instrument's clamping capacity
■ ≤ 26 mm

4.3 Power supply
■ A standard alkaline 9 V battery (type IEC 6LF22, 6LR61 or NEDA 1604). To change it, see §7.1.
■ Average battery charge life: 75 hrs or 25000 x 10 sec measures
■ Battery charge indicator ▭:
Flashing: autonomy < 1 hr
Continuous: change battery
■ Automatic shutdown if the selector switch or keys are not activated for 10 minutes (move the selector switch through the OFF position or activate any key to switch on again)

4.4 Environmental parameters

■ **Temperature - Humidity**



① Reference range ② Operating range
③ Storage range (without battery)

■ **Altitude**
- Operation: ≤ 2,000 m
- Storage ≤ 12.000 m

■ **Indoor use**
Impermeability: protection index IP 40 *(according to EN 60529, ed. 92)*

4.5 Compliance with norms

■ **Electrical safety**
(as per EN 61010-1 ed. 95 and 61010-2-032, ed. 93)
- Double insulation: ⧈
- Installation category: III
- Pollution level: 2
- Rated voltage: 600 V (RMS or DC)

or
- Installation category : IV
- Rated voltage : 300V (RMS or DC)

■ **Electric shocks** *(test as per IEC 1000-4-5)*
- 6 kV in differential mode on the voltmeter function, aptitude criterion B
- 2 kV on the current measurement cable, aptitude criterion B

■ **Electromagnetic compatibility**
(as per EN 61326-1 ed. 97 + A1)
Emission: class B
Immunity:
- Electrostatic discharge:
  4 kV on contact, aptitude criterion B
  8 kV in the air, aptitude criterion B
- Radiation fields: 10 V per m, aptitude criterion A
- Rapid transients: 1 kV, aptitude criterion B
- Directed disturbance: 3 V, aptitude criterion A

■ **Mechanical resistance**
- Free fall 1 m *(test as per IEC 68-2-32)*
- Impact: 0.5 J (test as per IEC 68-2-27)
- Vibration: 0.75 mm (test as per IEC 68-2-6)

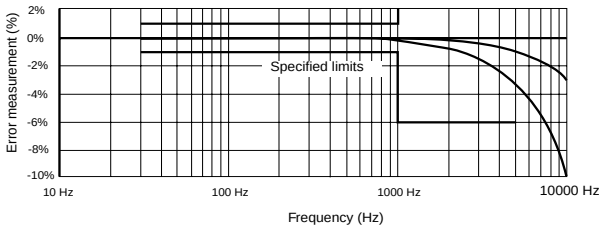
■ **Auto-extinction** (as per UL94)
- Casing: V0
- Jaws: V0
- Display window: V2

4.6 Variations in operating range

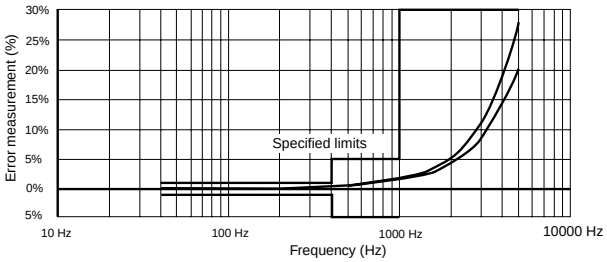
Relevant parameter	Meas. range parameter	Parameter affected	Effect	
			Typical	Max
Battery voltage	7.5 to 10 V	1 count	≤ 1 ct	0.2% L +1 ct
Temperature	0...50°C	V A Ω →|– T°	0,05% L/10°C 0,1% L/10°C 0,1% L/10°C -	0,2% L /10°C +2 ct 0,2% L /10°C +2 ct 0,2% L /10°C +2 ct 0,5% L /10°C +5 ct
Relative humidity	10....90% RH	V A Ω →|– T°	≤ 1 ct 0,2% L ≤ 1 ct ≤ 1 ct	0,1% L +1 ct 0,3% L +2 ct 0,3% L +2 ct 0,1% L +1 ct
Frequency	40 Hz...1 kHz 1 kHz...5 kHz 40 Hz...400 Hz 400 Hz...1 kHz 1 kHz...5 kHz	V A	see curve see curve	1% L +1 ct 6% L +1 ct 1% L +1 ct 5% L +1 ct 3 dB
Position of the conductor in the jaws (f ≤ 400 Hz)	Any position on internal perimeter of the jaws	A	0,7% L	1% L +1 count
Remanence	0...600 A peak	A	2 mA/A	3 mA/A
Adjacent conductor with 400 A_{AC} or RMS current running through	Conductor in contact with the external perimeter of the jaws	A	45 dB	40 dB
Conductor clamped	0...400 V DC or RMS	V T°	<1ct <1ct	1ct 1ct
Application of voltage to the clamp	0...600 V DC or RMS	A	<1ct	1ct
Peak factor	1.4 to 3.5 limited to 600 A peak 900 V peak	A_{AC} V_{AC}	1% L 1% L	3% L + 1 count 3% L + 1 count
Rejection of series mode in DC	0...600 V/50 Hz 0...400 A/50 Hz	V_{DC} A_{DC}	50 dB 50 dB	45 dB 45 dB
Rejection of series mode in AC	0...600 V DC 0...400 A DC	V_{AC} A_{AC}	<1ct 55 dB	60 dB 40 dB
Rejection of common mode	0...600 V/50 Hz	V A	<1ct <1ct	60 dB 0,1 A
Influence of an external magnetic field	0...400 A/m (50 Hz)	A	65 dB	60 dB
Number of jaw opening manoeuvres	50000	A	0.3% L	1% +1 count

■ **Typical frequency response curve**

- V = f (f)



- I = f (f)



4.7 Operating limit conditions

■ **Temperature of the conductor clamped**: ≤ 110°C

5. TO ORDER

Use the descriptions and references given below:

F03 ..... P01. **1209.03Z**
Comes in a blister with a set of two touch leads, 1 x K thermocouple adaptor, 1 x 9 V battery, a carrying case and these operating instructions.

F03 ..... P01. **1209.13Z**
Comes in a blister with a set of two touch leads, 1 x 9 V battery, a carrying case and these operating instructions.

Accessories and spare parts

- Set of 2 touch leads (NF EN 61010) P01. **2950.84**
- Set of 2 leads with safety plugs (NF EN 61010) P01. **2950.88**
- Set of two alligator clamps (NF EN 61010) . P01. **1018.48**
- Set of 2 IP2X touch leads P01. **2951.57**
- Carrying case N°7 ..... P01. **2985.32**
- K couple adaptor / Ø 4 mm plugs P01. **1017.80**
- General purpose temperature sensor SK13 type with handle P03. **6529.18**
- A number of other K couple type sensors are available to suit the particular application (ambient air, surface, penetration, etc.) Please consult us
- Different measuring accessories broaden the application scope of your clamp or give it additional functions. Please consult us

NB: *Always use the appropriate accessories for the voltage and surge category of the circuit to be measured (as per NF EN 61010).*

6. WARRANTY

Our guarantee is applicable for **twelve months** after the date on which the equipment is made available (extract from our General Conditions of Sale, available on request).

7. MAINTENANCE

⚠ **For maintenance, use only specified spare parts. The manufacturer will not be held responsible for any accident occuring following a repair done other than by its After Sales Service or approved repairers.**

7.1 Changing the battery

⚠ **The clamp must be disconnected from any external source of electricity and must not encircle a cable.**

- Put the switch into the OFF position
- Slide a screwdriver into the slot at the top of the battery flap (at the back of the clamp) and push the battery flap upwards.
- Replace the dead battery with a 9 V battery, type LF22, ensuring that the polarity is respected.
- Replace the battery in its housing, then replace the battery flap.

7.2 Storage

If the clamp is not to be used for a period of more than 60 days, remove the batteries and store them separately.

7.3 Cleaning

⚠ **The clamp must be disconnected from any external source of electricity and must not encircle a cable.**

- To clean the casing and jaws, use a cloth slightly moistened with soapy water. Clean off with a damp cloth. Then dry quickly with a cloth or pulsed air.
- Do not splash water onto the clamp.
- Ensure that the space between the jaws is kept perfectly clean.

7.4 Metrological verification

⚠ **It is essential that all measuring instruments are regularly calibrated.**

For checking and calibration of your instrument, please contact our accredited laboratories (list on request) or the Chauvin Arnoux subsidiary or Agent in your country.

Maintenance

Repairs under or out of guarantee: please return the product to your distributor.